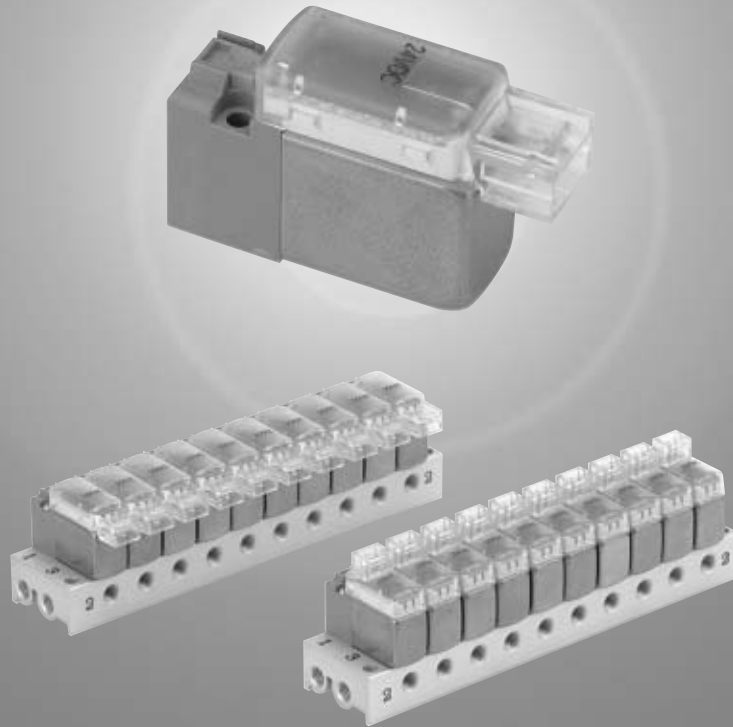


3 Port Solenoid Valve Series V100

Power Consumption 0.1 W (With power saving circuit)



V100
SY
SYJ
VK
VZ
VT
VP
VG
VP
S070
VQ
VKF
VQZ
VZ
VS
VFN

Coil temperature rises: 1°C (With power saving circuit)

Sonic conductance C: 0.037 (Standard)/C: 0.076 (Large flow capacity)

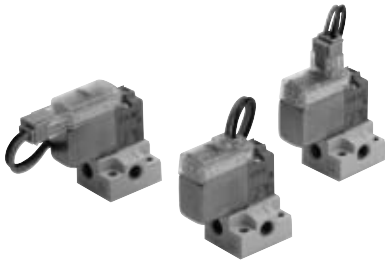
Series		Flow characteristics		
		C[dm ³ /(s·bar)]	b	Cv
Standard	V1□4	0.037	0.11	0.008
Large flow capacity	V1□4A	0.076	0.070	0.016

Variations

Series		Type of actuation	Operating pressure range (MPa)	Power consumption (W)	
				Standard	With power saving circuit
Standard	V114	N.C.	0 to 0.7	0.35	0.1
	V124	N.O.	0 to 0.7	0.35	0.1
Large flow capacity	V114A	N.C.	0 to 0.7	1	—
	V124A	N.O.	0 to 0.7	1	—

3 Port Direct Operated Solenoid Valve Rubber Seal

Series V100



Specifications

Fluid	Air
Ambient and fluid temperature (°C)	-10 to 50 (No freezing. Refer to page 4-18-2.)
Response time (ms) ^{Note 1)}	ON: 5 or less OFF: 4 or less
Max. operating frequency (Hz)	20
Manual override	Non-locking push, Locking slotted
Lubrication	Not required
Mounting position	Unrestricted
Impact/Vibration resistance (m/s ²) ^{Note 2)}	150/30
Enclosure	Dustproof



Note 1) Based on dynamic performance test JIS B8374-1981 (Standard type: at coil temperature of 20°C, with rated voltage, without surge voltage suppressor)

Note 2) Impact resistance: No malfunction resulted in an impact test using a drop impact tester. The test was performed one time each in the axial and right angle directions of the main valve and armature, for both energized and de-energized states. (Value in the initial stage)

Vibration resistance: No malfunction resulted in 45 to 2000 Hz, a one-sweep test performed in the axial and right angle directions of the main valve and armature for both energized and de-energized states. (Value in the initial stage)

Solenoid Specifications

Series		V114/V124	V114A/V124A
Electrical entry		Grommet (G)/(H), L plug connector(L) M plug connector (M)	
Coil rated voltage (V)	DC	24, 12, 6, 5, 3	
	AC ^{50/60} Hz	—	100, 110, 200, 220
Allowable voltage fluctuation		-10 to 10%	
Power consumption (W)	DC	Standard: 0.35 (With indicator light: 0.4) With power saving circuit 0.1	1 W (With indicator light: 1.1)
Apparent power (VA)	AC	100 V	1.4 (With indicator light: 1.5)
		110 V [115 V]	1.6 (With indicator light: 1.7) 1.7 (With indicator light: 1.8)
		200 V	2.3 (With indicator light: 2.4)
		220 V [230 V]	2.5 (With indicator light: 2.6) 2.7 (With indicator light: 2.8)
Surge voltage suppressor		Refer to page 4-2-11.	
Indicator light		LED	

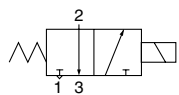


* Can be used for 110 V and 115 VAC, 220 V and 230 VAC in common.

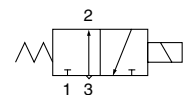
* For 115 VAC and 230 VAC, the allowable voltage fluctuation will be -15% to 5% of the coil rated voltage.

JIS Symbol

V114(A)



V124(A)



3 Port Direct Operated Solenoid Valve Rubber Seal Series V100

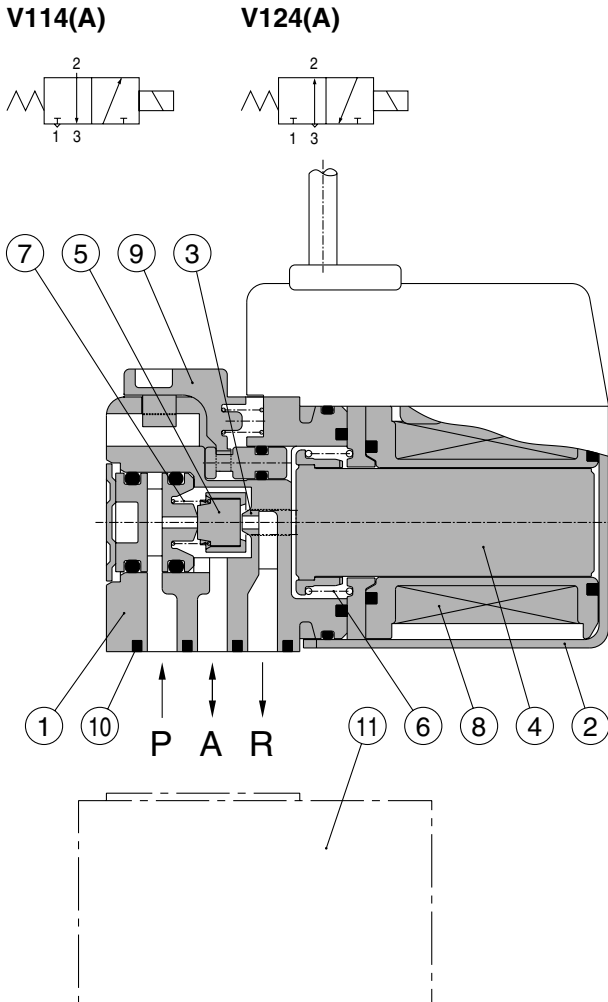
Specifications

Valve model	Type of actuation	Model	Operating pressure range (MPa)	Vacuum specification (MPa)		Port size		Weight (g) ^{Note 2)}	
				Port 1	Port 3	Port 1, 3	Port 2	Grommet	L plug connector M plug connector
V114	N.C.	Standard	0 to 0.7	-100 kPa to 0.6	-100 kPa to 0	M5 x 0.8	M5 x 0.8	V1□4:13(27) V1□4A:16(30)	Plug connector V1□4:12(26) V1□4A:15(29)
V114A	N.C.	Large flow capacity	0 to 0.7	-100 kPa to 0.6	-100 kPa to 0	M5 x 0.8	M5 x 0.8		
V124 ^{Note 1)}	N.O.	Standard	0 to 0.7	-100 kPa to 0	-100 kPa to 0.6	M5 x 0.8	M5 x 0.8	V1□4A:16(30)	V1□4A:15(29)
V124A ^{Note 1)}	N.O.	Large flow capacity	0 to 0.7	-100 kPa to 0	-100 kPa to 0.6	M5 x 0.8	M5 x 0.8		

	Flow characteristics					
	1 → 2			2 → 3		
	C[dm ³ /(s·bar)]	b	Cv	C[dm ³ /(s·bar)]	b	Cv
V114	0.037	0.11	0.0080	0.054	0.35	0.015
V114A	0.076	0.070	0.016	0.099	0.23	0.024
V124 ^{Note 1)}	0.054	0.35	0.015	0.037	0.11	0.0080
V124A ^{Note 1)}	0.099	0.23	0.024	0.076	0.070	0.016

Note 1) For both V124, V124A, pressure from port 3 and exhaust from port 1.
Note 2) The values shown in () are for values with sub-plate.

Construction



Component Parts

Number	Description	Material
1	Body	Resin
2	Cover	Stainless steel
3	Push rod	Resin
4	Armature assembly	Stainless steel, Resin
5	Poppet	FKM
6	Return spring	Stainless steel
7	Poppet spring	Stainless steel
8	Coil assembly	—
9	Manual override	Resin

Replacement Parts

Number	Description	No.	Material	Note
10	Gasket assembly	V100-31-1A	FKM, Steel	Gasket, 2 screws
11	Sub-plate	V100-74-1	Aluminum die-casted	—

How to Order Connector Assembly

For DC: **SY100-30-4A**

For 100 VAC: **SY100-30-1A**

For 200 VAC: **SY100-30-2A**

For other voltages of AC: **SY100-30-3A**

Without lead wire: **SY100-30-A**

(With connector and 2 sockets)

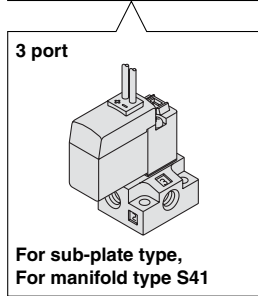
● Lead wire length	
Nil	300 mm
6	600 mm
10	1000 mm
15	1500 mm
20	2000 mm
25	2500 mm
30	3000 mm
50	5000 mm

- V100
- SY
- SYJ
- VK
- VZ
- VT
- VP
- VG
- VP
- S070
- VQ
- VKF
- VQZ
- VZ
- VS
- VFN

Series V100

How to Order

Standard



Type of actuation

1	Normally closed
2	Normally open

Coil specification

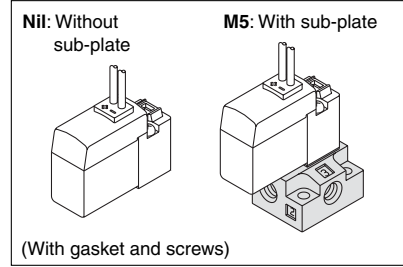
Nil	0.35 W
T	0.1 W (With power saving circuit) (24 VDC, 12 VDC only)

* All the types with power saving circuit are with light/surge voltage suppressor.

Rated voltage

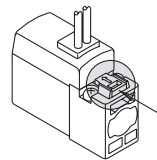
For DC	
5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

Port size

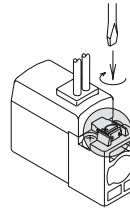


Manual override

Nil: Non-locking push type



B: Locking slotted type



Electrical entry

24 VDC, 12 VDC, 6 VDC, 5 VDC, 3 VDC			
Grommet	L plug connector	M plug connector	
G: 300 mm lead wire	L: 300 mm lead wire	M: 300 mm lead wire	MN: Without lead wire
H: 600 mm lead wire			
	LN: Without lead wire	LO: Without connector	MO: Without connector

* "LN" and "MN" types are with 2 sockets.

Light/Surge voltage suppressor

Nil	Without light/surge voltage suppressor
S	With surge voltage suppressor
Z	With light/surge voltage suppressor
R	With surge voltage suppressor (Non-polar)
U	With light/surge voltage suppressor (Non-polar)

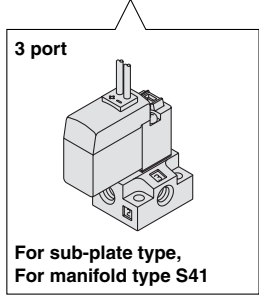
* Only "Z" is available for the types with power saving circuit.

3 Port Direct Operated Solenoid Valve Rubber Seal Series V100

How to Order

Large flow

Base mounted V1 1 4 A 5 M



Type of actuation

1	Normally closed
2	Normally open

Large flow capacity

Rated voltage

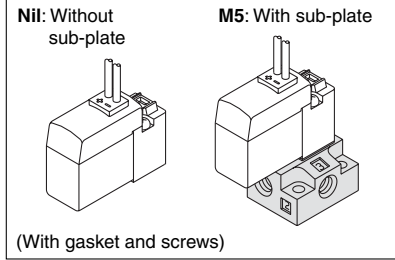
For DC	
5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC
For AC (50/60Hz)	
1	100 VAC
2	200 VAC
3	110 VAC [115 VAC]
4	220 VAC [230 VAC]

Electrical entry

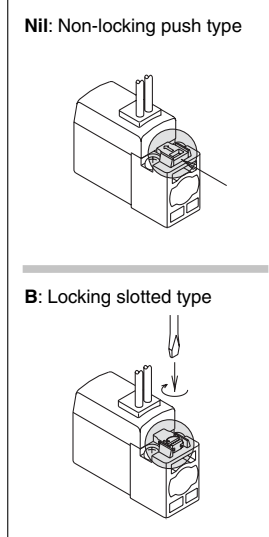
24 V, 12 V, 6 V, 5 V, 3 VDC/100 V, 110 V, 200 V, 220 VAC			
Grommet	L plug connector	M plug connector	
G: 300 mm lead wire H: 600 mm lead wire	L: 300 mm lead wire	M: 300 mm lead wire	MN: Without lead wire
	LN: Without lead wire	LO: Without connector	MO: Without connector

* "LN" and "MN" types are with 2 sockets.

Port size



Manual override



Light/Surge voltage suppressor

Nil	Without light/surge voltage suppressor	For DC, AC
R	With surge voltage suppressor	For DC
U	With light/surge voltage suppressor	
Z	With light/surge voltage suppressor	For AC

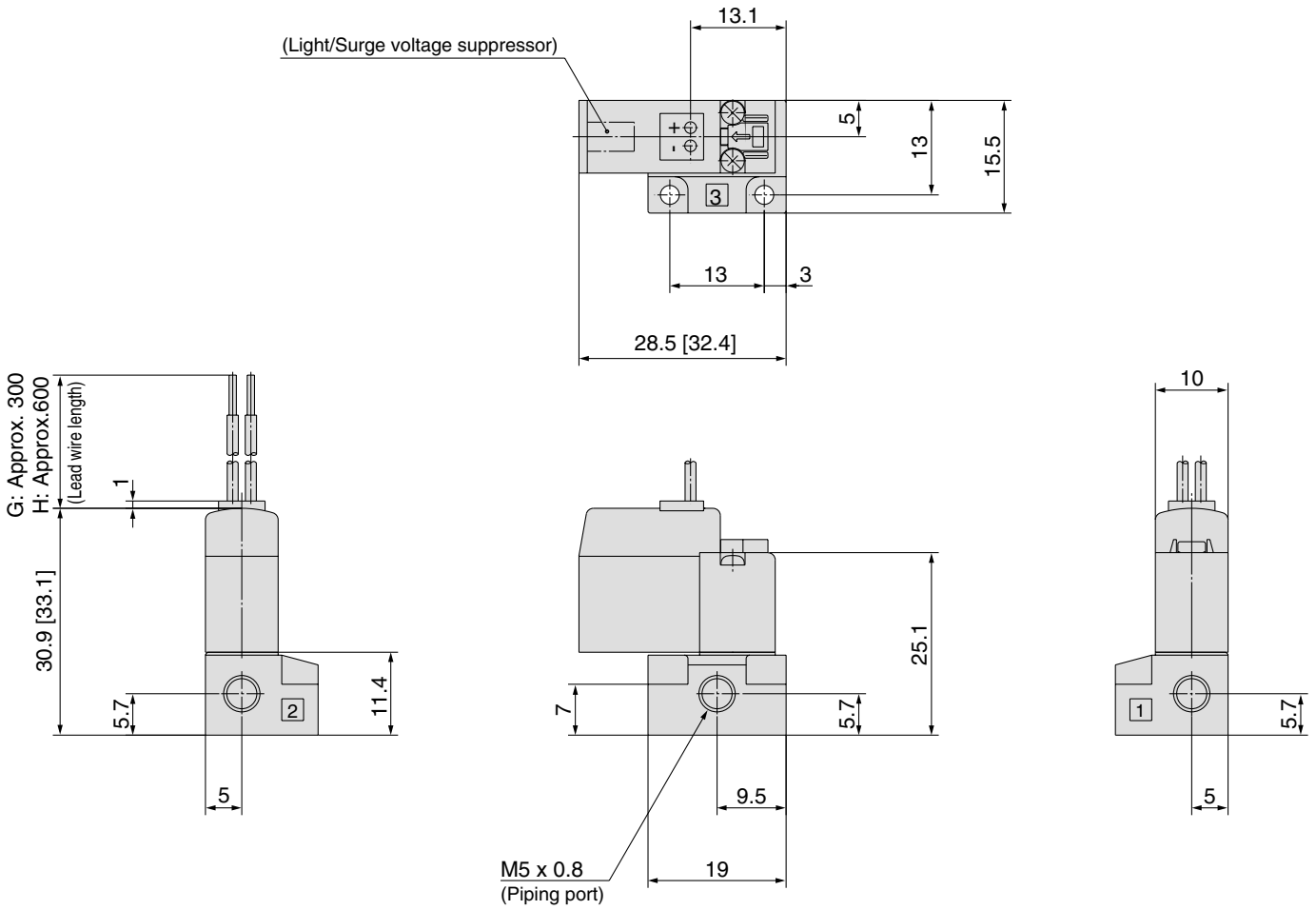
- V100
- SY
- SYJ
- VK
- VZ
- VT
- VP
- VG
- VP
- S070
- VQ
- VKF
- VQZ
- VZ
- VS
- VFN

Series V100

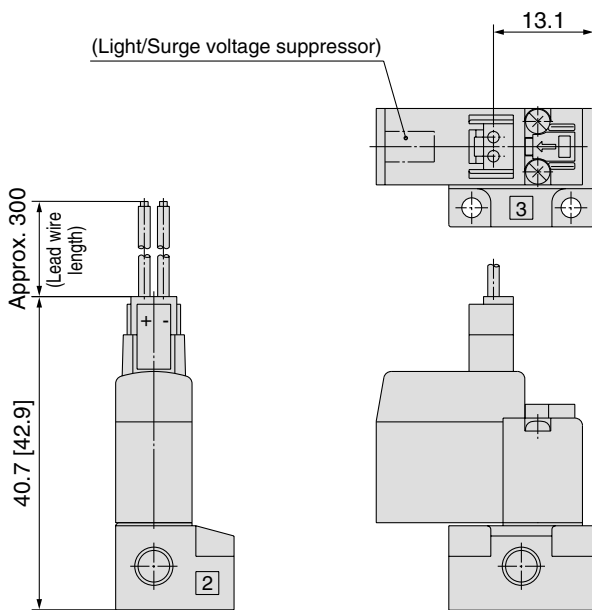
Base Mounted (With sub-plate)

Note) []: values for large flow type (A).

Grommet (G), (H): V1¹/₂(A)-□^G□□-M5

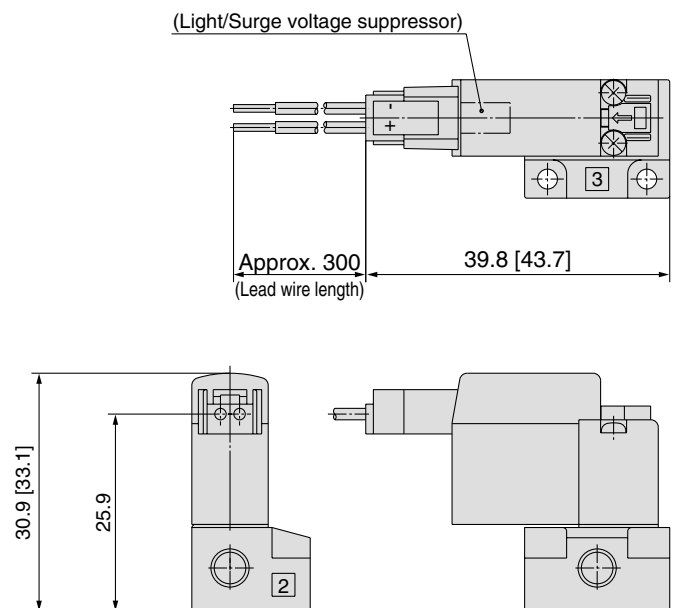


L plug connector (L): V1¹/₂(A)-□L□□-M5



* Other dimensions are same as grommet type.

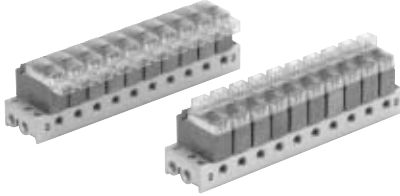
M plug connector (M): V1¹/₂(A)-□M□□-M5



* Other dimensions are same as grommet type.

Series V100

Manifold Specifications



Manifold Specifications

Specifications		Type S41
Manifold		Single base type/B mount
P (SUP)/R (EXH) type		Common SUP/Common EXH
Valve stations		2 to 20 stations
Output port porting specifications	Location	Base
	Direction	Side
Port size		M5 x 0.8



Note 1) V114(A) and V124(A) cannot be mounted onto the same manifold.
 Note 2) For V124(A), pressure from port 3 and exhaust from port 1.

Flow Characteristics

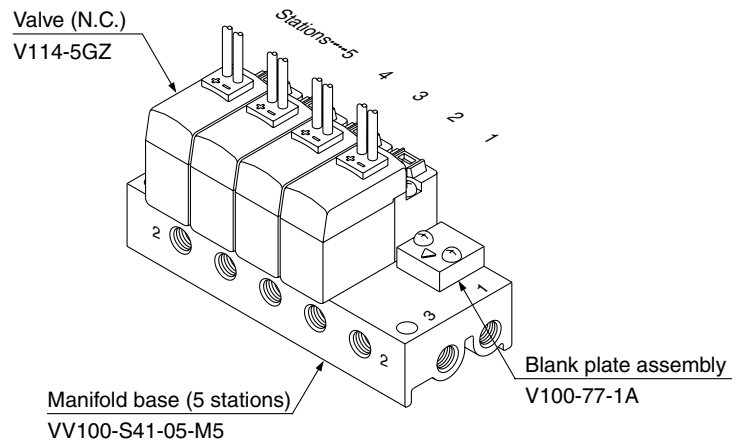
Manifold		Port size 1, 2, 3 port	Flow characteristics					
			1 → 2			2 → 3		
			C[dm ³ /(s·bar)]	b	Cv	C[dm ³ /(s·bar)]	b	Cv
Type VV100-S41	V114	M5 x 0.8	0.032	0.13	0.0072	0.050	0.26	0.012
	V114A		0.070	0.10	0.016	0.085	0.16	0.020
	V124		0.050	0.26	0.012	0.032	0.13	0.0072
	V124A		0.085	0.16	0.020	0.070	0.10	0.016



Note) Values when manifold base (5 stations) is mounted.

How to Order Valve Manifold Assembly

Ordering example



VV100-S41-05-M5 1 set (Type S41, 5 station manifold base part no.)

***V100-77-1A** 1 set (Blank plate assembly number)

***V114-5GZ** 4 sets (Valve)

↳ To order valves and options mounted onto the manifold at the factory, list the valve/option with an asterisk (*) in front of each part number.

List part numbers of the installed valve and option in required station location separately under manifold part number.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

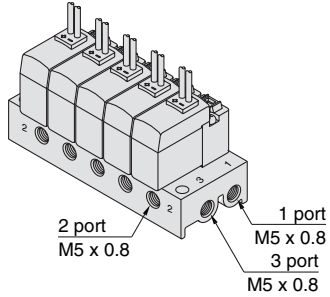
VS

VFN

Series V100

Common SUP/Common EXH

Type S41



How to Order

VV100 – S41 – 05 – M5

Stations	
02	2 stations
⋮	⋮
20	20 stations

2 port size	
M5	M5 x 0.8

Applicable solenoid valve ^{Note)}

V114-□□□□
 V114A-□□□□
 V124-□□□□
 V124A-□□□□

Applicable blank plate assembly

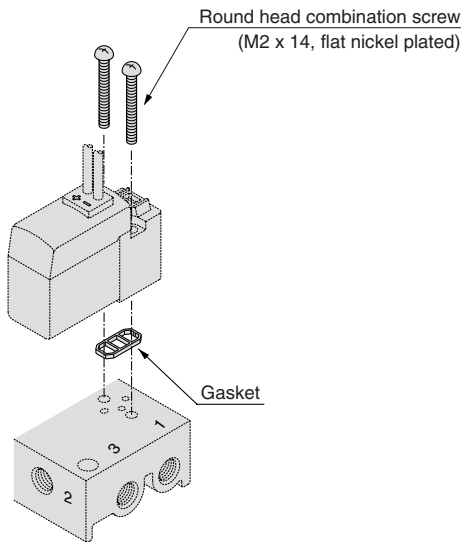
V100-77-1A



Note) V114(A) and V124(A) cannot be mounted to the same manifold.

Gasket Assembly

Part no.: V100-31-1A



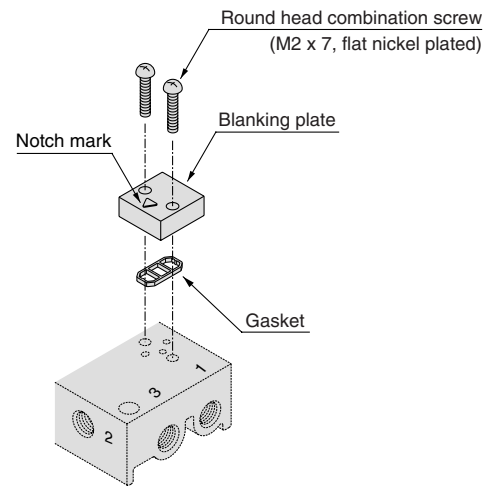
Applicable base

- Sub-plate
- Type VV100-S41 manifold base

Blank Plate Assembly

Part no.: V100-77-1A

Place notch mark on the blank plate to 2 port side when assembling.



Applicable base

- Sub-plate
- Type VV100-S41 manifold base

⚠ Caution

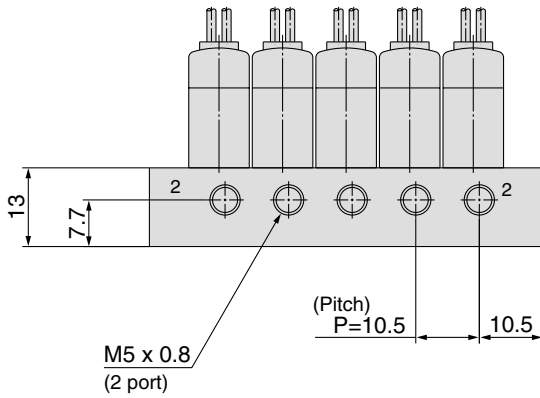
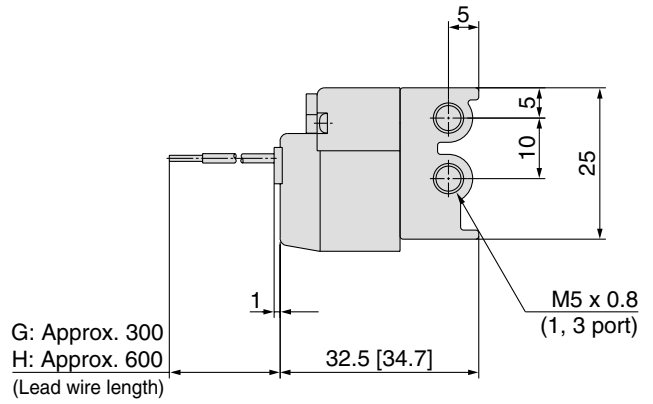
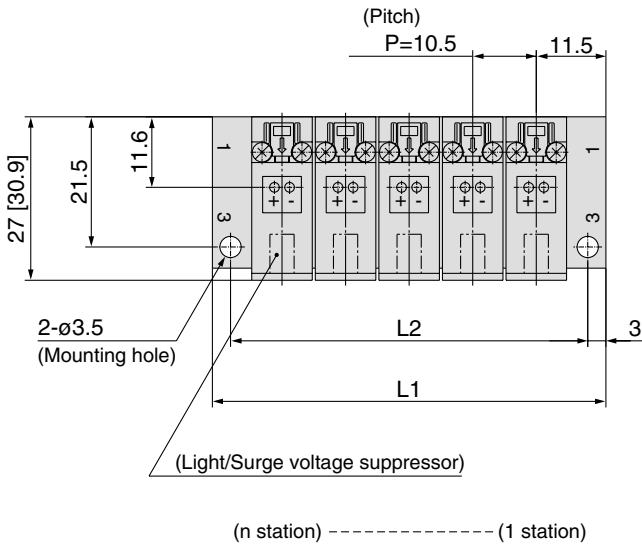
Mounting screw tightening torques **M2: 0.12 N·m**

3 Port Direct Operated Solenoid Valve Rubber Seal Series V100

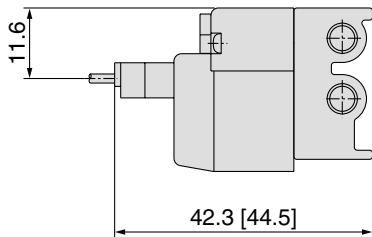
Manifold Type S41: Side Ported/VV100-S41-Stations-M5

Note) []: values for large flow type (A).

Grommet (G), (H)

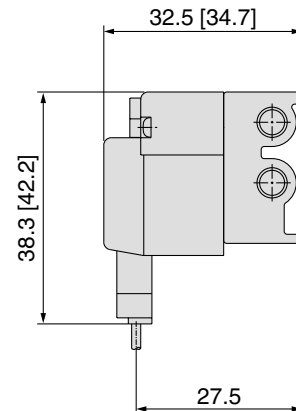


L plug connector (L)



* Other dimensions are same as grommet type.

M plug connector (M)



* Other dimensions are same as grommet type.

Station	2 stations	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20 stations
L1	33.5	44	54.5	65	75.5	86	96.5	107	117.5	128	138.5	149	159.5	170	180.5	191	201.5	212	222.5
L2	27.5	38	48.5	59	69.5	80	90.5	101	111.5	122	132.5	143	153.5	164	174.5	185	195.5	206	216.5

- V100
- SY
- SYJ
- VK
- VZ
- VT
- VP
- VG
- VP
- S070
- VQ
- VKF
- VQZ
- VZ
- VS
- VFN

Series V100



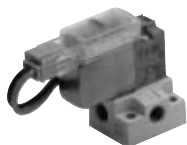
Specific Product Precautions 2

Be sure to read before handling.

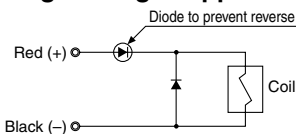
Surge Voltage Suppressor

<For DC>

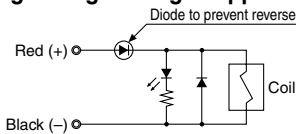
Grommet, L/M Plug Connector



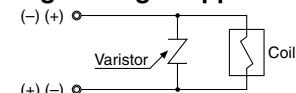
Standard type (With polarity) With surge voltage suppressor (□S)



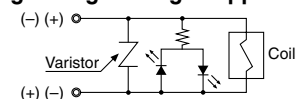
With light/surge voltage suppressor (□Z)



Non-polar type With surge voltage suppressor (□R)



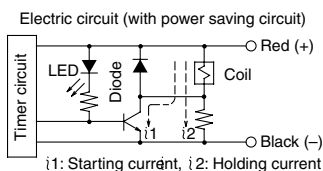
With light/surge voltage suppressor (□U)



- Please connect correctly the lead wires to + (positive) and - (negative) indications on the connector.
- For DC voltages other than 12, 24 VDC, incorrect wiring will cause damage to the surge voltage suppressor circuit since a diode to prevent reverse current is not provided. (Wrong polarity will cause trouble.)
- Solenoids, whose lead wires have been pre-wired: positive side red and negative side black.

With power saving circuit

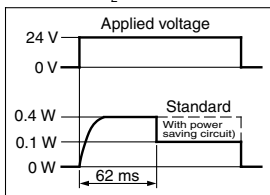
Power consumption is reduced by approximately 75% compared with the standard product by eliminating the need for electrical current for holding. (Effective after more than 62 ms energized and 24 VDC rated voltage applied.)



Working Principle

The electrical circuit as shown above, allows reduced holding current consumption and measures power saving. Refer to the electric waveform on the right.

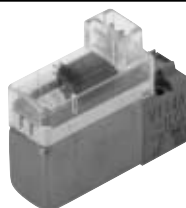
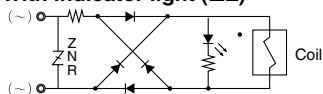
<Electric waveform in power saving, in the case of V1.4T>



<For AC>

Grommet, L/M Plug Connector

With indicator light (□Z)



Caution

In the case of ZNR surge voltage suppressor, note the surge voltage to be suppressed at controller side as there will be a residual voltage according to the protective element and rated voltage. Moreover, the residual voltage of the diode is approximately 1 V.

Connector Assembly with Cover

Connector assembly with protective cover enhances dust protection

- Effective in preventing possible short circuit problems due to contaminants in contact with connector section.
- Cover material is chloroprene rubber which has excellent weatherability and electric insulation properties. However, be careful not to allow contact with cutting oil, etc.
- Round cord provides neat appearance.

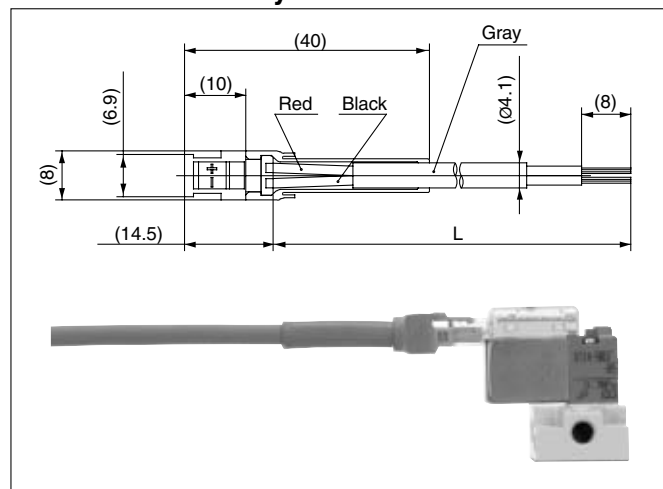
How to Order

SY100-68-A

● Lead wire length (L)

Nil	300 mm
6	600 mm
10	1000 mm
15	1500 mm
20	2000 mm
25	2500 mm
30	3000 mm
50	5000 mm

Connector Assembly with Cover: Dimensions



How to Order

Indicate part number of connector assembly with cover in addition to the solenoid valve part number without connector of the plug connector.

<Ex. 1> Lead wire length: 2000 mm

V114-5LOZ-M5

SY100-68-A-20

<Ex. 2> Lead wire length: 300 mm (Standard)

V114-5LPZ-M5

Symbol of connector assembly with protective cover

* No part numbers of connector assembly with cover are needed to be indicated in this case.

V100

SY

SYJ

VK

VZ

VT

VP

VG

VP

S070

VQ

VKF

VQZ

VZ

VS

VFN